

REMARKS

Claims 1-68 are rejected. Claims 14-68 are canceled herein. Claims 1-13 remain pending. No new matter has been added

35 U.S.C. §102 Rejections

Claims 39-41 and 43 are rejected under 35 U.S.C. §102(e) as being anticipated by Bick, U.S. Patent No. 6,924,789 (hereinafter Bick).

Applicants respectfully submit Claims 39-40 and 43 are canceled herein. As such, the rejection of Claims 39-41 and 43 is moot.

35 U.S.C. §103 Rejections

Claims 1-4, 13-15, 21, 25, 26, 44-46, 55-59, 67 and 68

Claims 1-4, 13-15, 21, 25, 26, 44-46, 55-59, 67 and 68 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bick in view of Seely et al., U.S. Patent No. 6,188,391 (hereinafter Seely).

With respect to Claims 14-15, 21, 25, 26, 44-46, 55-59, 67 and 68, Applicants respectfully submit Claims 14-15, 21, 25, 26, 44-46, 55-59, 67 and 68 are canceled herein. As such, the rejection of Claims 14-15, 21, 25, 26, 44-46, 55-59, 67 and 68 is moot.

With respect to Claims 1-4 and 13, Applicants respectfully assert that Bick and Seely, alone or in combination, fail to teach or suggest subject matter recited within Independent Claim 1.

Independent Claim 1 recites: "A capacitive sensing device for use in a keypad assembly of an electronic system, said capacitive sensing device comprising:

a substantially transparent single sheet capacitive sensor, said substantially transparent single sheet capacitive sensor configured to be disposed within said keypad assembly without requiring the formation of key post holes therethrough, said substantially transparent single sheet

capacitive sensor is coupled to a keymat having a plurality of keys formed therein, said substantially transparent single sheet capacitive sensor integrated within said keymat; and
said substantially transparent single sheet capacitive sensor having a flexibility which enables desired tactile response during use of said plurality of keys of said keypad assembly” (emphasis added).

Applicants agree with the statement on page 3 of the current Office Action. That is, Applicants also do not understand Bick to disclose a substantially transparent single sheet capacitive sensor (emphasis added).

However, at page 4, the present Office Action submits that Seely does provide a consolidated sensor in a single layer. Further, the Office Action provides that “it would have been obvious to a person of ordinary skill in the art to modify the substantially transparent capacitive sensor of Bick, such that the sensors were patterned as taught/suggested by Seely to consolidate the sensor into a single layer. The suggestion/motivation for doing so would have been to achieve a compact capacitive sensing device that significantly reduces the cost of production without adversely affecting its functionality” (emphasis added).

According to MPEP 2106 (VI)

“Once differences are identified between the claimed invention and the prior art, those differences must be assessed and resolved in light of the knowledge possessed by a person of ordinary skill in the art. Against this backdrop, one must determine whether the invention would have been obvious at the time the invention was made. If not, the claimed invention satisfies 35 U.S.C. 103.”

Applicants respectfully submit the combination as suggested by the present Office Action appears to utilize improper hindsight when establishing the present obviousness of the rejection. Specifically, Applicants understand Seely to teach forming a capacitive sensor on a printed circuit board (PCB) (at least Abstract,Figs. 6-8 and Col. 6 lines 55-63).

As Applicants understand Bick, to utilize the keypad portion the user must be able to depress the key of choice and the key must be able to deform a key dome lying underneath the capacitive sensor. At the same time, Applicants understand Bick to provide a user with the ability to use the entire keypad surface as a capacitive sensor.

As such, Applicants respectfully submit that if the single layer PCB capacitive sensor of Seely was used in place of the capacitive sensors of Bick as suggested, Bick would no longer be operational as a keypad. In other words, the suggested combination would require significant change in either the method of operation of Bick or the structure of Seely. That is, pushing a key 18 into a PCB (in place of Bick's system 19 as suggested) would not reliably result in the key dome underlying the proper key being selected. Instead, a push on key 18 of Bick, in the suggested combination, would more likely provide a force on the PCB that would translate into pressure on any, none or all key domes there under.

In contrast, if the suggested combination of Bick and Seely were realized, Applicants submit the most obvious and least complex modification for ensuring the proper key dome was depressed would be placing holes into the PCB capacitive sensor of Seely.

Thus, Applicants submit without the improper use of hindsight, if an engineer were to combine Bick and Seely, the solution would be to put holes in the PCB of Seely to allow the keys of Bick to interact with the proper key domes there under. In contrast, Applicants submit it would not be obvious to remove the PCB from the structure of Seely as this would fundamentally change Seely and require significant experimentation.

For these reasons, Applicants respectfully submit that the rejection of Claim 1 based on the combination of Seely and Bick is improper as the combination does not provide a *prima facie* case of obviousness. As such, Applicants respectfully submit that Claim 1 is not taught or rendered obvious over Bick in view of Seely, and as such the rejection under 35 U.S.C. §103(a) is overcome.

With respect to Claims 2 and 13, Applicants respectfully submit the rejection utilizes improper hindsight and fails to provide a prima facie case of obviousness as the combination as taught in the present Office Action utilized improper hindsight and did not account for the referenced subject matter as a whole. Further, Applicants respectfully submit that it is improper to simply state that the PCB should be transparent. Specifically, Applicants respectfully contend the methodology, costs and materials required to manufacture a transparent PCB would teach away from the combination as suggested.

For these reasons, Applicants respectfully submit that the rejection of Claims 2 and 13 based on the combination of Seely and Bick is improper as the combination does not provide a prima facie case of obviousness. As such, Applicants respectfully submit that Claims 2 and 13 are not taught or rendered obvious over Bick in view of Seely, and as such the rejection under 35 U.S.C. §103(a) is overcome.

Also, since Claims 2-4 and 13 depend from Independent Claim 1, Applicants respectfully submit Claims 2-4 and 13 derive patentability at least therefrom.

Claims 5-12, 16-20, 22-24, 47-54 and 60-66

Claims 5-12, 16-20, 22-24, 47-54 and 60-66 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bick and Seely and further in view of Kleinhans et al., U.S. Patent No. 6,664,489 (hereinafter Kleinhans).

With respect to Claims 16-20, 22-24, 47-54 and 60-66, Applicants respectfully submit Claims 16-20, 22-24, 47-54 and 60-66 are canceled herein. As such, the rejection of Claims 16-20, 22-24, 47-54 and 60-66 is moot.

With respect to Claims 5-12, Applicants respectfully assert that Bick and Seely and further in view of Kleinhans fails to teach or suggest subject matter recited within Claims 5-12 for the following rationale.

Applicants respectfully contend, for the reasons provided herein, that Claim 1 is allowable.

As such, Applicants respectfully submit that Claims 5-12 depend from Independent Claim 1 and derive patentability at least therefrom.

Further, with respect to Claims 5 and 10, as previously stated, and incorporated herein, Applicants respectfully submit the rejection utilizes improper hindsight and fails to provide a prima facie case of obviousness as the combination as taught in the present Office Action utilized improper hindsight and did not account for the referenced subject matter as a whole. Further, Applicants respectfully submit that it is improper to simply state that the PCB should be transparent. Specifically, Applicants respectfully contend the methodology, costs and materials required to manufacture a transparent PCB would teach away from the combination as suggested.

In addition, Applicants respectfully submit that the addition of Kleinhans does not overcome the shortcomings of the combination of Bick in view of Seely as provided herein.

For these reasons, Applicants respectfully submit that the rejection of Claims 5 and 10 based on the combination of Seely and Bick and further in view of Kleinhans is improper as the combination does not provide a prima facie case of obviousness. As such, Applicants respectfully submit that Claims 5 and 10 are not taught or rendered obvious over Bick in view of Seely and further in view of Kleinhans, and as such the rejection under 35 U.S.C. §103(a) is overcome.

Claim 42

Claim 42 is rejected under 35 U.S.C. §103(a) as being unpatentable over Bick in view of Kleinhans.

Applicants respectfully submit Claim 42 is canceled herein. As such, the rejection of Claims 42 is moot.

Claims 27-38

Claims 27-38 are rejected under 35 U.S.C. §103(a) as being unpatentable over Bick in view of Seely and Kleinhans.

Applicants respectfully submit Claims 27-38 are canceled herein. As such, the rejection of Claims 27-38 is moot.

Claims 39-40 and 43

Claims 39-40 and 43 are rejected under 35 U.S.C. §103(a) as being unpatentable over Binstead (6,137,427) in view of Bick.

Applicants respectfully submit Claims 39-40 and 43 are canceled herein. As such, the rejection of Claims 39-40 and 43 is moot.

Claim 41

Claim 41 is rejected under 35 U.S.C. §103(a) as being unpatentable over Binstead and Bick and further in view of Lambert et al. (6,972,575).

Applicants respectfully submit Claim 41 is canceled herein. As such, the rejection of Claims 41 is moot.

Claims 1-4, 13-15, 21, 25, 26, 44-46, 55-59, 67 and 68

Claims 1-4, 13-15, 21, 25, 26, 44-46, 55-59, 67 and 68 are rejected under 35 U.S.C. §103(a) as being unpatentable over Binstead in view of Bick and Seely.

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With respect to Claims 1-4 and 13, Applicants respectfully assert that Binstead in view of Bick and Seely, alone or in combination, fail to teach or suggest subject matter recited within Independent Claim 1.

Independent Claim 1 recites: "A capacitive sensing device for use in a keypad assembly of an electronic system, said capacitive sensing device comprising:

a substantially transparent single sheet capacitive sensor, said substantially transparent single sheet capacitive sensor configured to be disposed within said keypad assembly without requiring the formation of key post holes therethrough, said substantially transparent single sheet capacitive sensor is coupled to a keymat having a plurality of keys formed therein, said substantially transparent single sheet capacitive sensor integrated within said keymat; and

said substantially transparent single sheet capacitive sensor having a flexibility which enables desired tactile response during use of said plurality of keys of said keypad assembly" (emphasis added).

Applicants agree with the statement on page 3 of the current Office Action. That is, Applicants also do not understand Bick to disclose a substantially transparent single sheet capacitive sensor (emphasis added).

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As such, Applicants respectfully submit that if the single layer PCB capacitive sensor of Seely was used in place of the capacitive sensors of Bick as suggested, Bick would no longer be operational as a keypad. In other words, the suggested combination would require significant change in either the method of operation of Bick or the structure of Seely. That is, pushing a key 18 into a PCB (in place of Bick’s system 19 as suggested) would not reliably result in the key dome underlying the proper key being selected. Instead, a push on key 18 of Bick, in the suggested combination, would more likely provide a force on the PCB that would translate into pressure on any, none or all key domes there under.

In contrast, if the suggested combination of Bick and Seely were realized, Applicants submit the most obvious and least complex modification for ensuring the proper key dome was depressed would be placing holes into the PCB capacitive sensor of Seely.

Thus, Applicants submit without the improper use of hindsight, if an engineer were to combine Bick and Seely, the solution would be to put holes in the PCB of Seely to allow the keys of Bick to interact with the proper key domes there under. In contrast, Applicants submit it would not be obvious to remove the PCB from the structure of Seely as this would fundamentally change Seely and require significant experimentation.

With respect to Binstead, Applicants respectfully submit the combination of Binstead in view of Bick in further view of Seely is improper as Binstead does not overcome the shortcomings with respect to Bick in view of Seely.

Further, in contrast with page 11 at the third paragraph of the present Office Action, Applicants do not understand Binstead to disclose a capacitive sensing device for use in a keypad assembly of an electronic system. Moreover, Applicants understand Binstead to teach a touchpad that (col. 2 lines 11-12) “uses only sensing conductors and has no moving parts” (emphasis added).

Thus, Applicants do not understand Binstead to teach or render obvious any type of keymat at all. Instead, Applicants understand item 50 of Binstead to be a dielectric laminate. Further, Applicants respectfully submit Figures 9 and 10 of Binstead, and its accompanying description in the Specification, clearly teach a touchpad surface having (col. 7 lines 2-3, “an increased number of “boxes” or predetermined key areas 60, 61” (emphasis added).

Thus, Applicants do not understand Binstead to teach or render obvious “a substantially transparent single sheet capacitive sensor, said substantially transparent single sheet capacitive sensor configured to be disposed within said keypad assembly without requiring the formation of key post holes therethrough, said substantially transparent single sheet capacitive sensor is coupled to a keymat having a plurality of keys formed therein, said substantially transparent single sheet capacitive sensor integrated within said keymat; and said substantially transparent single sheet capacitive sensor having a flexibility which enables desired tactile response during use of said plurality of keys of said keypad assembly” (emphasis added).

For these reasons, Applicants respectfully submit that the rejection of Claim 1 based on the combination of Binstead in view of Bick and Seely is improper as the combination does not provide a prima facie case of obviousness. As such, Applicants respectfully submit that Claim 1 is not taught or rendered obvious over Binstead in view of Bick and Seely, and as such the rejection under 35 U.S.C. §103(a) is overcome.

With respect to Claims 2 and 13, Applicants respectfully submit the rejection utilizes improper hindsight and fails to provide a prima facie case of obviousness as the combination as taught in the present Office Action utilized improper hindsight and did not account for the referenced subject matter as a whole. Further, Applicants respectfully submit that it is improper to simply state that the PCB should be transparent. Specifically, Applicants respectfully contend the methodology, costs and materials required to manufacture a transparent PCB would teach away from the combination as suggested.

For these reasons, Applicants respectfully submit that the rejection of Claims 2 and 13 based on the combination of Binstead in view of Bick and Seely is improper as the combination does not provide a prima facie case of obviousness. As such, Applicants respectfully submit that Claims 2 and 13 are not taught or rendered obvious over Binstead in view of Bick and Seely, and as such the rejection under 35 U.S.C. §103(a) is overcome.

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With respect to Claims 5-12, Applicants respectfully assert that Binstead in view of Bick and Seely and further in view of Kleinhans fails to teach or suggest subject matter recited within Claims 5-12 for the following rationale.

Applicants respectfully contend, for the reasons provided herein, that Claim 1 is allowable.

As such, Applicants respectfully submit that Claims 5-12 depend from Independent Claim 1 and derive patentability at least therefrom.

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Claim 42

Claim 42 is rejected under 35 U.S.C. §103(a) as being unpatentable over Binstead in view of Bick in view of Kleinhans.

Applicants respectfully submit Claim 42 is canceled herein. As such, the rejection of Claims 42 is moot.

Claims 27-38

Claims 27-38 are rejected under 35 U.S.C. §103(a) as being unpatentable over Binstead in view of Bick and Seely and Kleinhans.

Applicants respectfully submit Claims 27-38 are canceled herein. As such, the rejection of Claims 27-38 is moot.

CONCLUSION

In light of the above listed remarks, Applicants respectfully request allowance of rejected Claims 1-13.

The Examiner is invited to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present application.

Please charge any required fees or credit any overpayments to Deposit Account Number: 50-4157.

Respectfully submitted,

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